Frankly Speaking

Hard-Won Recognition

THE recommendations of the President's Highway Safety Conference in Washington on May 8, 9 and 10, provide a stimulus and present a challenge to all traffic engineers. In the Action Program adopted by the Conference, it is recommended that engineering principles and techniques for the elimination or diminution of physical hazards and for the safe, efficient control of traffic movements be fully utilized by all appropriate agencies concerned with highway transportation. Among the specific measures recommended by the Committee on Engineering of the Conference is the establishment by all States, and cities of 100,000 or more population, of properly staffed divisions or departments responsible for the application of engineering measures in the field of traffic control having the authority and facilities needed to perform this function. It is recommended by this Committee that such a department or division should be comparable in authority with other principal divisions.

The recognition by the President's Highway Safety Conference of the importance of traffic engineering in an effective plan to increase the safety and the efficiency of our streets and highways is encouraging. Such recognition should do much to convince State and local governments of the importance of establishing traffic engineering departments where they do not now exist and for rehabilitating those which lost ground because of loss of personnel during the war.

The national recognition afforded traffic engineering is a stimulus to renewed efforts on the part of traffic engineers. It is at the same time a challenge to all traffic engineers to do everything possible to continue to deserve this hard-won recognition accorded their profession.

Henry E. Riegel

Renovate Old City Facilities First

by WILBUR S. SMITH, *(Member I.T.E.)*
Associate Director, Yale University Bureau of Highway Traffic

"UNTIL the end of the war." During the past 4 years that phrase has acquired a familiar ring. Now, in the early months of 1946, plans for public improvements of all kinds have come out of desk and file drawers. Plans for the safer and more efficient movement of vehicles and persons over the nation's streets and highways will receive attention, along with all the others. Improved roadway facilities will be provided as soon as materials, men and other essentials are available.

Public officials of every community are obligated to give traffic conditions and traffic problems the consideration they require and rightly deserve. Traffic officials have an excellent opportunity to render a needed service by providing information and assistance that will assure proper attention to traffic operations in the planning and design of all new roadway facilities. They have an equal responsibility in the operation of existing street systems in a way that will provide maximum capacity with minimum number and severity of accidents.

Even though the most optimistic post-war programs of road construction come into being, they cannot be expected to correct all traffic ills. When more and better road facilities are provided, they inevitably generate or induce much new traffic. Combine this with normal traffic volumes and it is evident that new facilities will, in most areas, be loaded almost as soon as they are completed. It must further be recognized, in dealing with the problems of cities, that new roadways will serve only a small part of the average city; most areas will have to depend on existing roads.

With increased automobile use and the return of business competition, it is evident that individuals, as well as business groups, will become more and more traffic-conscious. Such factors as the accessibility of central business districts, uncontrolled decentralization trends, parking and terminal conditions, and the effective utilization of mass transportation must be considered along with the general convenience and safety of automobile use. Traffic officials may be certain that their problems in cities will be compounded as motor-vehicle use increases. Failure to plan for the improvement of existing roadways constitutes a neglect of duty that will lead by the shortest route to certain traffic chaos.

What can traffic officials—and public officials and the public generally—do about it? Street systems now in use can be altered and improved to function at higher efficiency through the application of traffic-control devices, channelization, regulatory principles and other well-known means. Although many techniques of treatment involve regulations, they need not necessarily be restrictive in character.

Known techniques should be carefully explored, and every consideration given to whether they can be fitted to the needs of a particular community, or to particular sections of streets. It is always desirable in dealing with traffic to apply proved techniques wherever possible. Even though the methods of applying them may vary widely, they usually yield the same good results. Opinions about what improvements are needed should be advanced only as a sequel to the findings of surveys; they should never re-

place the facts and the conclusions the facts point to.

At the outset, the importance of the proper coordination of all groups dealing with traffic problems must be acknowledged. Engineers should not overlook the police. Enforcement officials should not feel that restrictive methods alone will solve traffic problems. It is folly to assume that educational techniques, which are often much closer to propaganda than to education, will alone and unaided help us out of our difficulties by making drivers and pedestrians so skillful and so careful that they will seldom blunder into trouble.

A Good Place to Start

How can a community begin to plan the improvement of existing traffic facilities? A good place to start is with a study of existing laws and ordinances controlling the use of streets and highways. The five uniform traffic acts developed by the National Conference on Street and Highway Safety, revised as late as 1944, constitute the best guide. If state traffic codes are substantially out of agreement with these national codes, they should be studied to ascertain whether the differences are desirable or justifiable.

City traffic ordinances should conform with state codes. Local authorities too frequently pass traffic ordinances that are at variance with state laws. Discrepancies indicate lack of cooperation and a failure on the part of one or both groups to recognize the best solutions.

Antiquated traffic laws are responsible for many evils. Motor traffic has developed in such a short time that it is natural to expect some lag in the improvement and modernization of laws. This condition can cause unfair treatment of drivers. If allowed to get out of hand, it will decrease the respect of drivers and pedestrians for all traffic laws. In the end, enforcement officials will find the strict enforcement of antiquated laws a hopeless task. The public will stand for restriction to only a certain degree. Unless this is recognized, traffic officials will be faced with extremely bad conditions of enforcement and regulation.

Traffic codes should be simple and few in number; they should also be as rational as possible. Above all, they must be uniform. And public officials must not fail to keep people informed about changes in traffic codes and ordinances.

Information obtained from accident records and basic traffic surveys is essential to the development of sound plans for improvements. Although some of the basic surveys that should be conducted are of a rather technical character and should be attempted only by technically trained persons, the great bulk are simple, and can be easily conducted by enforcement officials and similar groups.

Advantages can be gained from the use of priority lists based on accident experience and traffic conditions. It is never possible in any community to correct all bad conditions at one time through mass improvements. They must be handled progressively, as funds and other resources permit. Priority listings not only provide a factual basis on which improvements should be undertaken or a program of action developed; they are also useful in overcoming political and other pressures.

Improved Control Devices

In all programs of traffic improvement, early consideration should be given to more effective signs, signals, markings and lighting. Existing installations should not arbitrarily be assumed to be the best, or even adequate.

The Manual on Uniform Traffic Control Devices provides national standards for traffic-control devices. It should be followed by states, cities and all other political subdivisions. This manual, developed by a joint committee of the American Association of State Highway Officials, the Institute of Traffic Engineers and the National Conference on Street and Highway Safety, is being revised currently to include the latest findings.

1. Signs—Warrants for signs should be considered first. There has been a tendency in almost every community to oversign. So many unnecessary signs have been placed that the average driver has an inclination to disregard all. Surveys should be made to ascertain whether existing signs are needed and to determine where additional signs are required. Application of signs should be uniform, so that the same type of indication is given for similar roadway and traffic conditions.

Changes in traffic volumes should be considered. Increases in intercity and interstate travel will increase the need for improved route markings.

Signs should be refinished and obsolescent signs replaced. Wherever possible, a general remodeling job should be undertaken. Signs of a regulatory or guide character should be properly reflectorized for night visibility. Some courts have held that regulatory signs have no legal authority or effectiveness at night unless they are adequately reflectorized.

2. Signals — Signals should be checked, retimed and coordinated to meet new traffic demands. Reasonable progressive speeds, adequate clearance intervals and pedestrian indications are among the factors that should be especially considered. In downtown districts where pedestrian volumes are heavy, location and timing of signals should serve persons afoot as well as drivers.

3. Markings—Pavement and object markings are essential in traffic control. Adequate lane and crosswalk markings should be provided in downtown districts. Proper observance of signs and signals often depends on the character of pavement markings.

The use of reflector-type paints and other luminous devices for providing night visibility, particularly delineation, is worthy of careful consideration.

Object markings, affixed to obstructions on or near the roadway, are valuable in preventing collisions and in directing traffic into proper lanes. They should be kept in the best of condition, and should be uniform in color and application.

4. Lighting—Improved street lighting has been shown to reduce accidents at night. Wherever possible, lighting improvements should be made with traffic demands and traffic conditions in mind.

Basic Traffic Regulations

Revaluation of basic traffic regulations is essential for every city. There seems to be no limit to the good that can come from the careful application and enforcement of regulations.

1. Speed Control — Speed laws should be uniform; they must provide a high degree of flexibility, so that authorities can adjust them to varying conditions. They must be reasonable, yet it is likely that much inertia will have to be overcome in converting from wartime to peacetime limits. Public officials should not yield to the insistence of certain groups and individuals that the only solution to the traffic-accident problem is a reduction or a marked restriction of speeds.

Many successes were reported with speed zoning in suburban and urban areas before the war. Speed zoning permits adjustment of numerical limits to varying conditions of traffic and roadway, and should be given careful attention.

2. *Regulation of Curb Parking*— Even during the war, with depleted traffic, the parking problem remained one of the sorest spots in cities. It will not be solved at the curb in very many, if any, cities. Yet curb parking is usually of first concern. The type of curb parking (angle or parallel) is significant. A certain type of angle parking may afford more space at the curb, but invariably it restricts movements more than would parallel parking. The type of curb parking should be selected with moving traffic in mind, rather than to achieve maximum standing capacity at the curb. Some states and many cities now have laws making angle parking illegal, except where special permission is granted.

Many other aspects of curb parking control must be reckoned with, including establishment of time limits, the use of parking meters, restriction of sight distances at alleys and intersections, and various enforcement techniques.

Problems of loading and unloading trucks, taxis and public carriers are always critical. Methods employed should be carefully reviewed in relation to local problems.

In many cities it is necessary to prohibit curb parking in certain areas and on certain streets, giving the entire road space to moving traffic. Parking prohibitions may sometimes appear too rigid, but their merits stand out when the advantages gained in expediting movements are weighed.

3. *Off-Street Parking Facilities* — Many of the questions and difficulties that arise in connection with off-street parking have no fixed answers — at least at the moment. They usually involve the question of benefits and the prorating of costs. Studies and investigations now under way by national and local agencies may soon provide some of the answers, but it is expected that usually they will have to be determined separately for each city. It is generally agreed that there must be some public participation in the cost of off-street facilities, if they are to be provided in the proper areas and at costs that will be attractive to users.

4. *Loading Zones* — Loading and unloading zones must be provided for commercial vehicles in downtown areas. It is a matter of selecting the best locations and types in view of prevailing traffic, street and building conditions. Use of these spaces should be carefully reserved for commercial cars only. Adequate loading areas should also be provided for taxicabs, mail trucks and other special vehicles.

5. *Through Streets* — Through streets delay traffic on cross-streets, and should be established only after careful study of traffic and accident conditions. Through streets must be planned in relation to the general layout of the street system. In most cities, certain important routes and circumferentials naturally lend themselves to this treatment.

Changes in basic habits of local motorists may require particular enforcement attention until the plan has been thoroughly accepted. When any change in traffic control is made, it is essential to inform enforcement officials and request their cooperation in educating drivers, thus minimizing congestion, inconvenience and accidents.

Through streets will expedite major traffic movement, yet they may create some new traffic problems. Because of the ease of movement on through streets, drivers are tempted to exceed safe speed limits. Speed control must be given careful study when a throughway is established.

Through streets must be adequately signed and marked. Stop signs on all side-streets should be uniform, easily seen, and illuminated or reflectorized for good night visibility. Speed signs,

parking regulatory signs, route markings and other signs should also be carefully planned and maintained. Special attention should be given to the junctions of through streets, where it is often necessary to provide signalized control. Although a few cities have reported satisfactory control by the four-way stop, it is not generally recommended, and should be used only with great care. Proper channelization, with stop signs or signals, may be very desirable where two or more through streets intersect.

The establishment of through streets is not as simple as is generally considered. Unless carefully planned and laid out to fit physical conditions as well as traffic needs, they are not likely to fulfil the purposes they are intended for.

6. *One-Way Streets*—Properly applied, one-way regulations reduce congestion and accidents. The traffic advantages of one-way streets include (a) reduction of conflicts at intersections, (b) elimination of head-on and sideswipe collisions, (c) less trapping of pedestrians between traffic streams, (d) reduction of medial conflicts in the same direction, (e) elimination of headlight glare at night and (f) provision for more uniform traffic flow.

Most cities that have established one-way streets have reported marked reductions in accidents, up to 50 per cent. One-way streets greatly increase road capacity by reducing conflicts, by inducing higher uniform speeds and by utilizing odd traffic lanes. By providing greater street capacity and reducing midblock interference to converging conflicts, it is often possible to allow curb parking in areas where it could not have been allowed otherwise. One-way streets naturally have a favorable effect on the timing of traffic signals, making it necessary to consider only a single direction of traffic movement. Enforcement is simple, and almost automatic. Only a few signs are required. Public acceptance is general, and business is aided by making the congested areas of cities more accessible.

There may be some disadvantages, such as extra travel required, excessive speeds, confusion in direction of traffic and confusion at termination points.

One-way streets must be fitted to street patterns, they must be carefully signed, and operation of transit facilities over them must be planned. Designation of one-way streets should not make the movement of traffic in one direction too easy in comparison with that in the other. To avoid excessive travel, it is necessary to have frequent cross-streets.

7. *Unbalanced Flow* — On multilane streets (five or more lanes for moving traffic), unbalanced-flow regulations have been used advantageously to expedite movements during peak hours when the flow is predominantly in one direction. Opportunities for the beneficial application of unbalanced flow are limited, however, because of the lack of enough wide thoroughfares, properly located with regard to traffic demands. Where unbalanced flow is provided, it is necessary that the movement be adequately protected by control devices, physical barriers and regulations.

8. *Turning Regulations* — Elimination of left turns at some intersections and on certain streets may benefit traffic movements markedly. However, if improperly applied, such regulations may penalize many drivers and create worse conditions somewhere else. Lanes for special turns, signal intervals for turns, and adequate markings and signs should always be considered when turning regulations are established.

Prohibition of right turns generally is not recommended, except where pedestrian traffic is exceptionally heavy. By means of special lanes, signal intervals and markings, even very heavy right turns can usually be

controlled without continuously prohibiting them. Caution is advised in allowing right turns on red signals, since this practice has often resulted in increased accident rates.

The prohibition of all turns is an extremely restrictive measure and should be avoided wherever possible.

U-turns at intersections or in midblock are generally not desirable. However, prohibition of turns at intersections and other stringent regulations, when not properly applied, may make control of U-turns difficult.

Wherever prohibition or control of turns is contemplated, the effect on traffic at other locations should be considered. Often such measures will greatly alleviate the traffic problem at one point, but create hopeless congestion at adjacent intersections.

Roadway Improvements

Roadway improvements are effective measures for increasing traffic capacity and lowering accident rates.

1. Intersection Channelization — The benefits resulting from channelizing of intersections are generally known. Islands and other devices for directing traffic are often the means of moving volumes that never would be able to negotiate intersections safely otherwise. With proper channelizing and directional signs, many intersections can be made to accommodate heavier volumes than possible with properly timed signals. Complicated intersections that have a number of streets intersecting at peculiar angles are most likely to be benefited.

2. Non-Skid Pavements — Higher efficiency in intersection performance and reductions in accidents are achieved by providing non-skid pavements on all approaches. This is but one of many ways in which improved pavement surfaces bring about safer and more efficient use of existing roadways.

3. Medial Dividers—The application of medial dividers or islands has not generally been considered favorably in urban areas. On wide streets the application of medial islands, even though they may be so narrow as not to provide protection for turning vehicles, should be given careful consideration.

4. Street Widening — The expense of widening streets in urban areas is so great that benefits do not usually justify costs. However, worth-while improvements may be achieved in outlying areas. Some cities have grass plots between curbs and sidewalks that can be used to increase the capacity of streets. Widening may also be justified where curb parking cannot be eliminated, where special turning lanes are desired in advance of intersections, and under other special conditions.

Although possible benefits that may result should never be overlooked, no great hope should be held for street widening. Usually the streets that are most congested are in localities where widening involves tremendous costs. Widening simply to provide curb parking is usually uneconomical.

5. Turning Radii—Longer vehicle wheelbases, large truck and trailer combinations, and other vehicle design developments emphasize the importance of adequate turning radii at intersections. Many downtown intersections are not operating at reasonable efficiency because the radii of curbs do not permit turns without encroaching on lanes near the center-line. Studies of vehicle types, turning demands and natural paths will provide data as a basis for increasing radii at street intersections, private driveways, alleys and elsewhere.

6. Removal of View Obstructions —Studies of high-accident locations and congested points should always take sight distance into account. View obstructions may be temporary and easily removed, or they may require substantial physical alterations, which nevertheless can be achieved through a

long, well-planned program of improvement.

7. Control Devices in Roadway—Placement of traffic-control devices such as signs and signals in the roadway often creates a hazard and a deterrent to movements. Control devices should not be placed in the roadway unless the character of the intersection or the general roadway location is such that other locations would not be satisfactory. Where it is necessary to place control devices in the roadway, they should be protected by well-designed islands, and they must be adequately illuminated at night.

8. Permits—Officials can help traffic conditions appreciably by insisting on up-to-date standards relative to driveways, detours and constructive activities on or adjacent to the roadway. Limitations on building heights, requirements that buildings provide appropriate off-street parking facilities, control of access, provision of loading and unloading areas, and similar measures can do much for urban traffic. Zoning boards and officials must take them into account. Only through advance planning can many of the more serious traffic problems of the average community be overcome.

Public Transit

The part that mass carriers play in alleviating downtown traffic problems will vary, depending on habits and conditions. Most traffic authorities agree that transit operations can do much to remove congestion and otherwise alleviate serious downtown traffic difficulties.

1. Bus Stops—Near-side, far-side, mid-block and other types of bus stops all have their peculiar advantages and disadvantages. None can be considered best from the viewpoint of traffic conditons in a city as a whole. Each should be studied with respect to particular locations, and the one used that is best suited to conditions.

The war-time practice of skip-stops should be continued in many places. It has proved its merit in speeding up traffic movements on important streets, and it does not usually impose undue hardships on transit passengers.

2. Routing—Routing of transit vehicles often bears a direct relationship to efficiency of street operation. Studies should be made to assure that transit routes interfere as little as possible with private automobiles. Obviously, transit passengers cannot be greatly inconvenienced in order to remove or separate transit operations from the most heavily traveled routes.

3. Staggered Hours — No other means has been found that spreads traffic loads as effectively as staggering of working and shopping hours. This is an inconvenience in planning the affairs of the average home, however, and it may not be tolerated for long. Continuation of the method will require sound action on the part of traffic officials and the collection of convincing statistics.

4. Conversion from Rail to Free-Wheel—Because of their free-wheel characteristics, motor busses and trackless trolleys offer many advantages over street-cars in expediting traffic movements in congested city areas. City and transit authorities should give consideration to conversion from rail to bus or trackless-trolley operations.

Coordination of Effort

The central thesis of this article is that the greatest hope for the improvement of city traffic conditions lies in improving the operation of existing street systems. The city population—apart from the responsibility of individuals to become better drivers and walkers—is an essential partner in the program of reducing hazard and delay. The needs must be demonstrated to the public. The public must be shown how improvements can be paid for. An informed public can have a power-

ful influence on city officials who are not as sensitive to public needs as they should be.

The activities and plans of all individuals and groups dealing with the traffic problem must be properly coordinated. The adoption of a master plan of action, to which all subscribe, is essential for the effective handling of traffic in any community.

Hopeless conditions of congestion that make it impossible to use vehicles at anything like reasonable efficiency, added to the toll of traffic accidents, have created a situation that will not be tolerated for long. Demands that something be done must be met. They can be met in part by providing new and improved facilities as income permits. But finally, only by making the best possible use of the facilities that already exist, and that will have to continue to accommodate the large masses of vehicles for many years to come, can a satisfactory solution be achieved.

Reprinted from Better Roads, February, 1946.

One-way Street System Proposed for Portland

* Condensed from "Report on Traffic Congestion and the One-Way Traffic Plan" as transmitted to Wm. A. Bowes, Commissioner of Public Works by F. T. Fowler, Traffic Engineer, City of Portland, Oregon.

PORTLAND, Oregon, in common with other large metropolitan cities, is struggling with problems of acute traffic congestion in its downtown business area. While long range planning of traffic facilities is meritorious and much needed, some interim expedients must, nevertheless, be used to relieve existing traffic congestion. As a means of providing some immediate relief, the Traffic Engineering Bureau of the Department of Public Works has proposed a plan of one-way streets in the downtown business area—a plan which, it is felt, will do much to relieve the present situation.

The plan has been developed through consultation with and the cooperation of all interested parties, particularly officials of mass transportation companies and the Oregon State Highway Department. Professor B. Glenn of Oregon State College was instrumental in the assembly and analysis of data, much of the work being done by highway engineering students at the College.

The report and recommendations has been compiled in a "down to earth" manner, without any great volume of narrative material as regards "the great problem which confronts us." It was felt that enough had been written in this latter vein and that subject matter dealing in broad generalities had been fairly well exhausted insofar as presentation of useful and original thought was concerned.

In past years, sporadic attempts have been made to establish one-way streets in Portland without success. Past history indicates that such attempts failed rather by reason of inadequate advance planning and proper implementation rather than by any

failure of or weakness in the basic principle. In previous instances, "spot" one-way street designations submerged in a grid predominantly two-way in character, coupled with inadequate signing and other informative measures, have led to confusion and consequent lack of acceptance by the motoring public. The plan currently proposed is much more comprehensive in nature and covers the entire downtown business area.

Physical Aspects and Scope

Portland is bisected by the Willamette River with the central business area, in the main, lying on the west side of the river. There is a strip of business area flanking the easterly bank of the river which is predominantly commercial in nature; however, this latter section has not developed to the extent of causing such acute traffic conditions as prevail on the west side. The existing street facilities in the west side business area, with a few exceptions, are laid out on a symmetrical grid plan with 200-foot blocks and 60-foot streets east and west and 80-foot streets north and south. The bulk of local commuter traffic originates from the east side residential area, which fact operates to build up high peak traffic flow on the several Willamette River bridges. As is frequently found to be the case, the acute congestion occurs on the bridge approaches, rather than on the bridges. With the existing street plan in the business section, 45 per cent of the area is taken up by streets which would in itself seem an ample proportion to accommodate traffic if used efficiently.

Current maximum vehicular traffic volumes at downtown intersections run up to 16,000 vehicles per intersection with pedestrian volumes in the four crosswalks exceeding 90,000 in a 16-hour period. Mass transport facilities are limited principally to busses with trolley busses being used on major runs, supplemented by gas operated busses. Relatively few street cars have been held over from the original transport system—these latter being far from modern and carrying but a small increment of the mass transport load.

While certain objections and disadvantages have been raised and propounded by minority factions, it is sincerely believed that these are far out-weighed by the benefits which would accrue to the general welfare and economic processes of the city as a whole. The plan will allow more efficient use of available street area, permit increased lane capacities and a speeding up of the traffic streams. Fuller advantage can be taken of signalized control through simplification of timing. Efficient traffic progression is not possible with the present two-way traffic and the short-length blocks, but this handicap will certainly be overcome under the proposed plan.

Vehicular Traffic

At the present time average speed through the business area, based on speed delay data, is approximately 6 miles per hour. The proposed plan, with revised signal timing, will permit theoretical sustained speeds of 15 miles per hour. No exhaustive analysis has been made to determine the monetary saving which would accrue as a result of the time saving, decreased fuel consumption, and the lessened wear and tear on vehicles, but it is obvious that savings would be appreciable.

With few exceptions, the curb-to-curb street widths are one of two dimensions—36 feet or 50 feet. Generally speaking, the narrower dimension is that of the East-West streets and the 50-foot widths are North-South streets. On the narrow 36-foot curb to curb streets, there are available two 8-foot parking lanes with the

remaining 20 feet providing two 10-foot lanes for moving traffic. This breakdown will hold for either one- or two-way operation. Under the present scheme of operation, the 50-foot roadways provide two parking lanes leaving 34 feet which is insufficient to provide four adequate moving lanes. As a result, these streets operate as two-lane roadways, insofar as moving traffic is concerned. Under the proposed one-way street plan, the 34 feet available would be divided into three lanes, each 11 feet 4 inches in width. This generous width would of itself result in much more efficient usage in addition to the advantage of having one-direction flow in all three lanes. On two such flanking streets under the present two-way traffic plan, two lanes of moving traffic are provided in each direction, whereas under the proposed plan there would be three lanes in each direction, or an increase of 50 per cent in overall street capacities.

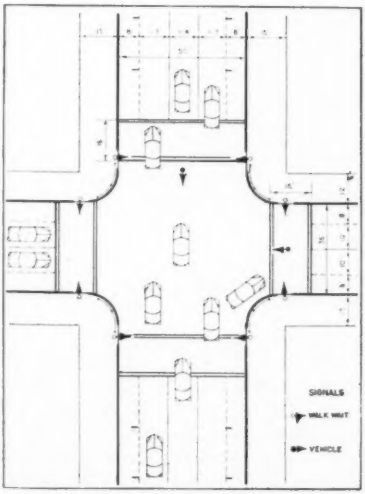

FIGURE 1

Typical Right Turn From Three-Lane to Two-Lane Street Showing Vehicle Clearance Space Due to Cross-Walk Setback.

Right and left turns at intersections under two-way traffic operation are impeded by pedestrian flow and, in the case of left turns, an opposing vehicular traffic stream must be crossed. The one-way street principle will completely eliminate the conflict between two traffic streams. The vehicular-pedestrian conflict will also be alleviated somewhat by a revised location of pedestrian crosswalks, as shown in Figure 1. Crosswalks will be set back from the intersection in a manner which will provide an out-of-the-way storage space for turning vehicles pending opportunity to "break through" the pedestrian traffic. This will assist in clearing the outside lane and permitting through vehicles to proceed without delay.

Considerably greater freedom in making passing maneuvers will be possible with the one-way street plan with the motorist relieved of any worries resulting from medial friction. This is a particular advantage on the narrower east-west streets where there are only two moving lanes available. It should also be pointed out that this greater freedom of movement will make it possible for emergency vehicles to move through the congested areas at a speed considerably higher than that of normal traffic movement—something which is practically impossible at the present time.

Pedestrian Traffic

Under the one-way street plan at signalized intersections, one pedestrian crosswalk is always free of vehicles. It is probable that when pedestrians have had an opportunity to become acquainted with the plan, they will then tend to use these free pedestrian lanes, if in so doing they are not materially inconvenienced in proceeding along their desired route of travel. For those pedestrian crosswalks where vehicle-pedestrian conflicts are possible, the

problem is considerably simplified in that pedestrians need worry about and watch for traffic from one direction, rather than two.

Mass Transportation

It is pointed out in the report that some revision will have to be made in the routing and, in some cases, in the type of mass transportation facilities. This phase has been studied quite thoroughly with transit company officials. The busses would realize all of those advantages accruing to vehicular traffic as a whole and thereby provide better and more acceptable service to the public.

Parking

The one-way street plan will permit vehicles to proceed directly to parking stalls on either side of the street, which will minimize to some degree the nuisance of "cruising" which now prevails. Curb deliveries will be greatly facilitated in that loading zones on the left side of the street may be reached without driving around a block. Movement to and from off-street parking facilities will be substantially simplified under the one-way street plan.

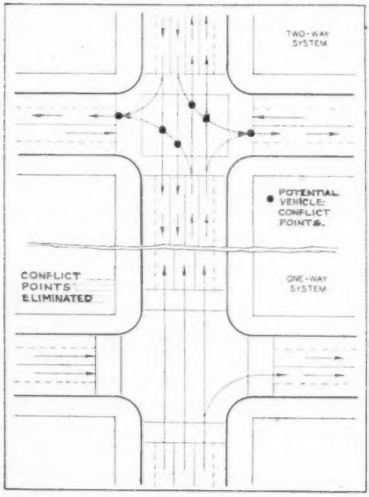

FIGURE 2

A Comparison of Signalized Intersections With One-Way and Two-Way Traffic Movements.

Accidents

It is anticipated that the overall accident experience will be appreciably reduced, not only because of the sound theoretical advantages cited but because of the actual experience in the application of this principle elsewhere. In some of the smaller towns of Oregon, one-way street routings as a means of facilitating through highway traffic have borne out the fact that accident experience can be materially improved. "Before" and "after" studies made in these smaller communities show accident reductions up to 40 per cent.

Under the system of two-way traffic there are, at a four-way signalized intersection, six points of possible conflict whereas under a plan of one-way traffic at a signalized intersection all points of direct vehicle crossing or conflict are eliminated as indicated in Figure 2.

As an indication of what may be expected in accident reduction under the one-way street plan, Figure 3 shows "before" and "after" collision diagrams for one of the major intersections in the business area. It is felt that the probable degree of improvement shown is conservative, since greater freedom of movement, wider-lanes, minimizing of medial conflicts, and other factors would also operate to reduce accidents. Under the one-way street plan head-on collisions are impossible and the hazard of headlight glare is eliminated.

Pedestrian safety will be considerably enhanced for reasons previously mentioned; namely, complete freedom in some instances from vehicular cross traffic, and in all instances, the need for watching for vehicles from only one direction. As a corollary to this

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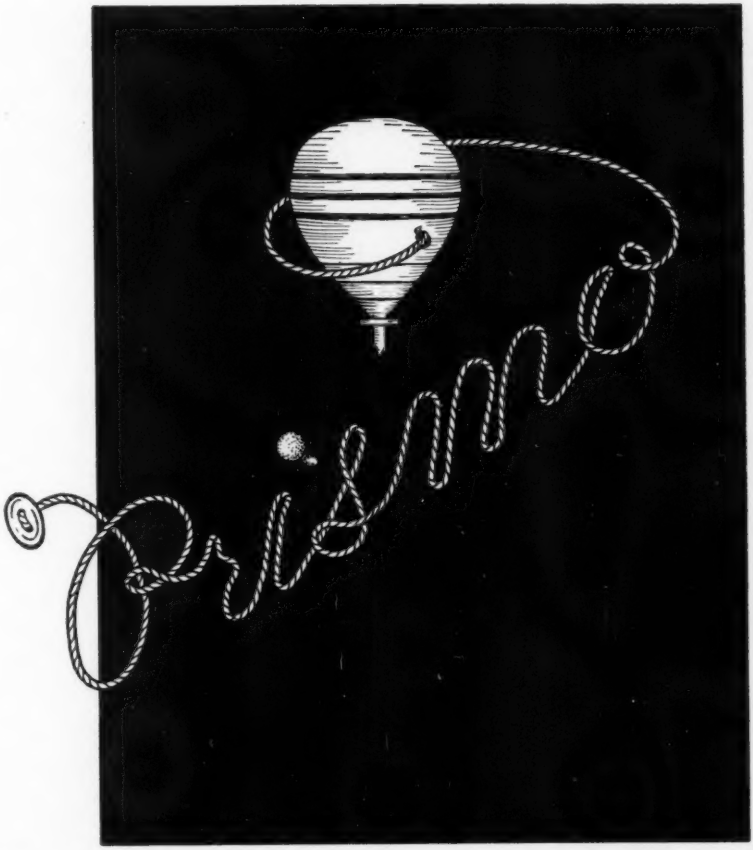

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latter benefit and as a result of the simplification of intersection movement, the motorist will be able to give more attention to the pedestrian and thereby lessen the likelihood of accident.

Implementation of One-Way Street Plan

The success or failure of any proposed plan which incorporates such a radical overhaul of a long accepted scheme of traffic movement hinges largely on a well-planned and executed program of preconditioning of the public, adequate signing and marking, proper signal timing, and other appropriate traffic engineering plans at the instant the changeover is made. Considerable thought has been given to these important factors, and a well defined procedure has been established for the time when the proposed plan may be approved and initiated.

Preliminary cost estimates have been compiled in connection with the plan and are listed as follows:

(1) Signing 280 intersections at $25.00	$ 7,0000.0
(2) Painting, incl. crosswalks, lane lines, arrows, etc.	3,000.00
(3) Signalizing 24 intersections at $1,500.00	36,000.00
(4) Moving parking meters, etc.	2,500.00
(5) Special illuminated signs	3,500.00
TOTAL	$52,000.00
Contingencies 15%	3,900.00
GRAND TOTAL	$55,900.00

Summary

The proponents of this comprehensive one-way street plan are convinced of its soundness and workability. At the present time the immediate problems in practically all large metropolitan areas are those which must be solved through relatively inexpensive

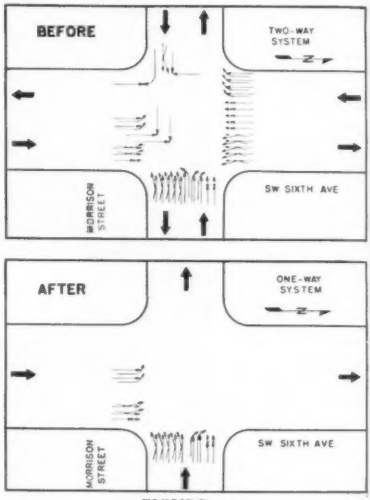

FIGURE 3

Accident Reduction Expectancy at Typical Intersection With One-Way Movements—Vehicle Collisions Only.

expedients and be within the financial means of the particular political subdivision, rather than the long range remedial measures requiring large capital outlay which must necessarily be amortized over a long time span. The proponents of the plan do not infer that long range planning is not a desirable and necessary function; however, as mentioned at the outset, something must be done and done quickly in many of our congested urban areas.

The city officials responsible for traffic control in this particular instance have been confronted with the generally prevalent opposition on the part of certain minority groups. However, by proper education, cooperation and logical reasoning, opposi-

tion to the plan is gradually diminishing. There can be little doubt that the proposed one-way street plan does have merit and that it would go a long way to relieve the congested condition now prevailing in the business area. Coupled with other supplemental measures, the adoption of such a plan would do much to impede the trend toward decentralization which, as in other large metropolitan areas, is becoming increasingly evident in Portland.

THE PRESIDENT'S HIGHWAY SAFETY CONFERENCE

Over two thousand persons attended the Highway Safety Conference called by President Truman for May 8, 9 and 10 in Washington, D. C. The purpose of this epochal meeting was realized in the formulation of the coordinated Action Program, designed to reduce the traffic deaths toll, which is now to be taken up and exploited individually by the respective States.

Highlighting the three-day conference were the addresses by various national figures including President Truman, Representative Clare Boothe Luce and Associate Justice William O. Douglas of the United States Supreme Court. These addresses were made in the big Departmental Auditorium on Constitution Avenue, where State Governors and officials, traffic safety officers and civic leaders from all parts of the country assembled each day. There were also a number of representatives from foreign countries present.

Eight committees had been making a thorough study of all factors of the highway safety problem, each committee having held meetings months previous to the conference. These eight groups covered the following subjects: Accident Records, Engineering, Organized Public Support, Laws and Ordinances, Motor Vehicle Administration, Public Information, Education, and Enforcement.

The committee reports were given final consideration at the Conference and revisions and additions made at that time.

Recommendations incorporated in these reports were then welded into the 24-page Action Program, embracing the positive and practical measures that experience has shown are necessary to curtail street and highway accidents.

Conference Chairmen

General Chairman of the Conference was Maj. Gen. P. B. Fleming, Administrator, Federal Works Agency, Washington, D. C., aided by Executive Director Col. Light Yost, Transportation Corps, War Department.

The Committee on Conference Reports was headed by Commissioner Thomas MacDonald, Public Roads Administration.

Chairmen of Conference Committees were as follows: Accident Records, Dr. George H. Gallup, Director, American Institute of Public Opinion; Engineering, Gibb Gilchrist, President, Agricultural and Mechanical College of Texas; Organized Public Support, Paul G. Hoffman, President, The Studebaker Corp.; Laws and Ordinances, Assoc. Justice Owen Roberts (retired), U. S. Supreme Court; Motor Vehicle Administration, Roy A. Roberts, Editor, Kansas City Star; Public Information, W. J. Scripps, Publisher, Detroit News; Education, Dr. G. D. Stoddard, N. Y. State Commissioner of Education; Enforcement, Arthur Vanderbilt, Dean, N. Y. University School of Law.

Conference Program

The first day of the Conference, Wednesday, May 8th, opened with an invocation followed by an address of welcome by Hon. J. R. Young, President, Board of Commissioners of the District of Columbia.

He said that traffic accidents in Washington, D. C. have increased 30% since termination of gasoline rationing, and that fatalities are on the increase locally as is true elsewhere. Mr. Young welcomed the delegates and said that he thought this was the most far reaching step yet taken to impress the public with the need for undertaking a forceful nationwide traffic safety campaign.

Following remarks by Maj. Gen. Fleming, General Chairman of the Conference, President Harry S. Truman gave an address, in which he departed from his prepared script and urged all States to tighten up on traffic regulations, particularly with regard to driver licensing requirements. In blunt language he criticized states without good driver licensing laws, including his own, Missouri, where it was possible to buy a driver's license "for a quarter of a dollar at a corner drugstore."

Following the President's address was the roll call of the States.

The first afternoon was given over to first hearings of conference committees, when open discussions were held of the provisional committee reports and recommendations, and suggestions invited for changes or additions from both committee members and outsiders.

Thursday morning, May 9, saw the committee hearings resumed, followed by the second general session in the Departmental Auditorium, where Associate Justice William O. Douglas, U. S. Supreme Court, addressed the assembled delegates and guests, telling them that it was not "too long ago" that the automobile was looked upon with apprehension. At that time, the fear was that the automobile would cause a great deal of unrest, that only the rich would be able to afford this "new luxury" he said.

"But mass production and high standards of living have dispelled worry of class distinction. The automobile is a basic American institution today. However, the loss of life and personal injury growing out of traffic accidents are appalling," he said. This was followed by the introduction of State Governors by Maj. Gen. Fleming.

Thursday afternoon began with an address by Representative Clare Boothe Luce, who stressed that traffic safety must begin with the individual, in self-restraint. She complimented her own State on taking first place in its population group in the National Traffic Safety Contest, and stated that if other states had equaled Connecticut's safety record, ten thousand lives would have been saved in 1945.

Following Mrs. Luce's address came the presentation of first place awards to states and cities in the National Traffic Safety Contest and the National Pedestrian Protection Contest. Iowa and Kansas were named the top state winners, respectively in these safety contests. Also the National Safety Council's award of honor for distinguished service was awarded to the Army Service Forces for the third straight year.

The third and last day of the Conference, Friday, May 10th, featured presentation of reports by the eight committee chairmen, and a talk by Paul G. Hoffman, President, The Studebaker Corp., and chairman of the Committee on Organized Public Support, who presented the Action Program developed at the Conference and embodying the recommendations of the eight Conference Committees.

THE HIGHWAY SAFETY PROGRAM RECOMMENDED BY PRESIDENT'S CONFERENCE

The principal elements of a balanced program are presented in the following seven sections of this report. They embrace the positive and practical measures that experience has shown are necessary to curtail street and highway accidents. Assembled by Conference Committees on Laws and Ordinances, Accident Records, Education, Enforcement, Engineering, Motor Vehicle Administration, and Public Information, these measures, with others included in the much more extensive individual committee reports, constitute a basic guide for highway safety, and are recommended by this Conference. The individual Committee reports, available in printed form, present detailed discussions, recommendations and references.

The final section, entitled "A Plan of Action," presents the recommendations of the Committee on Organized Public Support. The Conference strongly urges that this action program be undertaken without delay.

LAWS AND ORDINANCES

The Conference emphasizes the importance of uniformity in State and local traffic laws and regulations, and recommends adoption by all States and municipalities of the standards set forth in the Uniform Vehicle Code and the Model Traffic Ordinance.

Specific recommendations to these ends are as follows:

1. That States recognize the need for uniformity in text for the rules applicable to traffic movements, and for uniformity in substance as to all other provisions of the Uniform Vehicle Code; and that the laws of each State follow the Uniform Vehicle Code arrangement and sequence.

2. That each State legislature authorize a regular or interim committee to determine, with the assistance of an appropriate advisory group including representatives of official and unofficial agencies, the extent to which motor vehicle laws comply with the Uniform Vehicle Code, and to recommend necessary revisions.

3. That the responsible State officials currently advise their governors and legislatures as to the conformity of legislative proposals with or departure from the Uniform Vehicle Code, and that proposals which depart essentially therefrom be disapproved.

4. That each State publish a summary of its vehicle laws and publish separately in lay language, with illustrations, the substance of its rules of the road.

5. That governors of neighboring States join in calling regional conferences of legislators and public officials to further the uniformity of traffic laws.

6. That municipal ordinances and administrative regulations respecting motor vehicles and their use be similarly reviewed and revised to bring them into conformity with the Model Traffic Ordinance and with essential provisions of the Uniform Vehicle Code, and that laymen's summaries of such ordinances be published.

7. That uniformity in the administration, interpretation, and enforcement of uniform traffic laws and ordinances is of the utmost importance.

8. That uniformity in traffic signs, signals and markings in conformity with the Manual on Uniform Traffic Control Devices be attained by cooperative action of local, State, and Federal street and highway authorities.

9. That aggressive action to further the enactment of the Uniform Vehicle Code and Model Traffic Ordinance by the States and municipalities is an

important function of the national, State and local coordinating bodies as described and recommended in the Plan of Action beginning on page 13.

10. That provision be made for periodic review of these standards by the Committee on Uniform Traffic Laws and Ordinances of the National Conference on Street and Highway Safety.

ACCIDENT RECORDS

The Conference recommends that the collection and analysis of traffic accident reports be put on an effective basis throughout the country, and that full use be made of these records in guiding highway safety activities.

Specific measures to this end are recommended as follows:

1. Every municipality and State should have an actively functioning accident records bureau, with adequate funds and equipment and trained personnel.

2. Record agencies should be guided in the definitions of motor vehicle accidents, and in the preparation of report forms, by recommendations of the National Conference on Uniform Traffic Accident Statistics.

3. Each State should adopt, as a minimum, the accident reporting standards contained in Act V of the Uniform Vehicle Code.

4. Every effort should be made to get maximum and continuous compliance with the accident reporting laws.

5. Methods of processing accident records should be standardized at least to the extent that each records agency:

a. Prepares monthly and annual summaries and needed special studies of accident experience.

b. Maintains appropriate files and spot maps for readily studying the accident experience of individual locations and of specific drivers.

6. In guiding traffic accident prevention efforts, procedures outlined in the "Manual on Uses of Accident records" of the National Conference on Uniform Traffic Accident Statistics should be utilized.

7. Other agencies and groups collecting accident information, including all Federal agencies, other government units, motor fleet operators, and insurance companies, should make full use of their records in guiding their safety efforts.

These recommendations are contingent upon active support for the records agency from officials at the top level and from the public. Every administrator—from governors and mayors down—must recognize that records are not a by-product of the traffic safety program but rather are an essential aid to the determination of policies and the economical expenditure of public funds to produce maximum results in preventing accidents.

EDUCATION

The Conference recommends that American schools at all levels conduct traffic safety programs which will give adequate guidance in accident prevention to more than 30 million young people, and which will prepare them to shoulder their future responsibilities in a motor age.

Specific recommendations to this end are as follows:

1. Elementary Schools

Provide a safe school environment.

Prepare or revise courses of study in safety to emphasize traffic problems. Base day-by-day instruction on immediate needs and local situations, utilizing such techniques as dramatization, films, maps, etc., and providing opportunity to acquire skillful habits.

Encourage safety activities among student organizations and, where needed, organize safety patrols and safety councils.

Coordinate the program with home and community safety activities, providing qualified supervisory personnel whenever possible.

2. Secondary Schools

Provide driver education and training as an integral part of the curriculum for students approaching legal driving age and other traffic safety activities for all age levels in the secondary school.

a. Standards for driver education should enable students to exceed the State driver license requirements.

b. Whenever possible the secondary school should provide driver education and training as a summer service, at night sessions, and for adults in the community.

Determine the adequacy of the safety instruction program in relation to traffic needs; correlate it with present courses; and utilize co-curricular activities, student organizations, etc.

3. Teacher Education

In Colleges

a. Administrative officials should provide safe facilities at the college.

b. Safety education programs, which include traffic safety and driver education, should be conducted either separately or as part of several courses, with provision for developing elementary and secondary school programs.

c. Colleges should cooperate with school administrators in organizing extension courses, workshops, conferences and other aids to in-service training.

d. Opportunities should be offered for advanced study and research.

In Service

a. State, county, and city superintendents and supervisory officers should organize activities for the in-service training of teachers in traffic safety; include traffic safety in State and regional teacher conference programs; and provide instructional materials such as textbooks, visual aids, bulletins, posters, and driver testing equipment.

b. Teachers should be encouraged to participate in school and community traffic safety activities.

4. Colleges and Universities

Should cooperate with Federal, State and local agencies, public and private, in the training of highway transportation personnel such as engineers, administrators, fleet supervisors, police, driver license examiners, etc.

a. Expand research.

b. Engage in public safety education activities, through forums, radio programs, films, etc.

c. Offer fellowship and scholarship grants for advanced study in traffic safety.

5. Pupil Transportation

States

a. Administrative or supervisory personnel should be given responsibility for development of a complete program in pupil transportation, including the adoption and enforcement of the vehicle standards recommended by the 1945 National School Bus Conference, and should establish procedures that will insure the selection and training of qualified drivers and maintenance personnel.

Local Authorities

a. Should fix responsibility for administration and supervision of a program that will enforce the State requirements; provide sufficient vehicles to prevent overloading; develop safe schedules, loading, routing, etc.; and train pupils in safe bus transportation habits.

b. Should encourage the organization of school bus patrols.

ENFORCEMENT

The Conference recommends that States and cities conduct continuing traffic law enforcement programs of the type that will induce maximum voluntary observance of driver and

pedestrian regulations by creating an adequate deterrence to violations.

General recommendations to this end are as follows:

1. The courts, prosecutors, and police departments should be given adequate personnel, properly selected and trained; modern facilities necessary for efficient operation; and sound administrative organization and direction.

2. All corruption, special privilege, and political interference must be eliminated from enforcement processes.

Specific measures for bringing about effective, impartial, and continuing traffic law enforcement include the following which are recommended for uniform adoption by cities and States:

1. Police

Special traffic police unit, supplementing at the performance level the traffic law enforcement activities of all uniformed police.

Special training of personnel for traffic duties.

Establishment and execution of uniform enforcement policies that:

a. Avoid excessively liberal tolerances.
b. Make proper use of warnings and admonitions.
c. Secure prompt correction of vehicle safety equipment defects.
d. Extend leniency to nonresidents only on nonhazardous violations of purely local regulations.
e. Give no special privileges to any groups or individuals.
f. Provide selective enforcement of pedestrian regulations.
g. Include the investigation of accidents by specially trained and equipped units, and the prosecution by the police of violators involved in accidents when the evidence warrants.
h. Put enforcement on selective basis, in accordance with the urgency of need as disclosed by current factual analysis of accident and traffic records.
i. Assure an amount of supervision and enforcement action that is at all times adequate for maximum violation deterrence, but avoid "arrest quotas," sporadic campaigns, and concentration on "easy" arrests for non-hazardous violations.

Adherence to standards of organization, policy, and procedure prescribed by the International Association of Chiefs of Police as a means of carrying out these recommendations.

2. Prosecutors

Specially qualified prosecutors in all courts handling traffic cases. Sound methods and procedures, vigilantly followed, to assure proper case presentation and to prevent improper disposition or "fixing" of cases.

3. Courts

Courts of record should be provided for the hearing of all traffic cases.

Qualified judges to handle traffic cases in special traffic court sessions.

Efficient administration and proper court facilities.

Impartial disposition of all cases according to established judicial procedures.

Increased use of drivers' license revocations and suspensions as penalties through procedures established by State law.

General adoption by all jurisdictions of the improvements in traffic court administration recommended by the National Committee on Traffic Law Enforcement ("Traffic Courts" — 1940), and approved by the National Conference of Judicial Councils and the following groups of the American Bar Association: The Section of Criminal Law; the Section of Judicial Administration; the Junior Bar Conference, and the House of Delegates.

ENGINEERING

The Conference recommends that engineering principles and techniques

for the elimination or diminution of physical hazards and for the safe, efficient control of traffic movements be fully utilized by all appropriate agencies concerned with highway transportation.*

MOTOR VEHICLE ADMINISTRATION

The Conference recommends the adoption by the States of sound policies and procedures in the field of motor vehicle administration, with special attention to driver licensing, vehicle inspection, and other regulatory measures affecting highway safety.

Specific recommendations to this end are as follows:

1. Establishment of motor vehicle departments as independent units of State government, having equal status with other State Departments.

2. The provision for each department of an adequate budget and qualified personnel selected through a merit system or civil service, with technically trained individuals for key positions, and with a competent departmental executive having a fixed term of office.

3. Sound driver licensing, which should include:

   a. Adoption and use by all States of at least the minimum standards provided for in Act II of the Uniform Vehicle Code.

   b. Adoption of minimum standards for driver examination as recommended by the American Association of Motor Vehicle Administrators by those States where standards are lower. Where possible, standards should be higher than these minimums.

   c. Adequate facilities for training of examiners and for proper examination of drivers.

   d. Classification of driver licenses by type of vehicle, with separate examinations for each where needed.

   e. Provision of restricted licenses for the physically handicapped.

   f. Use of driver license fees for driver license administration.

4. Maintenance and use of central files providing complete records of motor vehicle registration and operation.

5. Adequate facilities and personnel should be provided for analysis of these records and resultant driver control as well as the development of information and statistical data of a research nature.

6. Motor vehicle administrators should continue their work in driver education and training, and maintain the necessary staff for that purpose.

7. The American Association of Motor Vehicle Administrators should be financed by its member State departments with sufficient funds to enable the Association to carry on its work in a positive and aggressive manner.

8. Encouragement of sound financial responsibility laws which through integration into the safety program tend to give greater control on driver licensing.

9. Establishment, in those States where an adequate over-all accident prevention program has been provided, of periodic motor vehicle inspection, on the basis of minimum standards prescribed in Act V of the Uniform Vehicle Code.

* The action program recommended by the Engineering Committee appears elsewhere in this issue.

★ ★ ★

MOST AUTOMOBILE TRIPS ARE SHORT

Approximately 35 per cent of all motor vehicle trips are less than five miles in length; 65 per cent are less than 10 miles, and 90 per cent are less than 30 miles in length.

PRESIDENT'S CONFERENCE ENGINEERING COMMITTEE RECOMMENDATIONS

1. It is recommended that provision be made for continuous and intelligently planned programs of publicity, education, and law enforcement, without which the maximum benefits of engineering contributions to traffic accident reduction cannot be obtained.

a. There is particular need to impress legislators and administrators with the fact that engineering standards cannot be translated into highway safety unless adequate funds and suitable engineering personnel are made available.

b. The education of persons of all ages in the safe use of vehicles, highways, and streets ranks high in importance. Engineering can accomplish much in accident prevention, but even with the finest possible engineering effort, the attitude and actions of individual pedestrians and drivers will still be prime factors in accident causation.

c. Particularly in this era of overage vehicles, an urgent request should be made of every motorist to fulfill his fundamental, moral, and legal responsibility by maintaining his vehicle in safe operating condition.

d. In the field of formal education, more fellowships for traffic engineering training at the graduate school level should be provided at American colleges and universities. To the extent practicable, the teaching of traffic safety and operation principles should also be incorporated in standard college and secondary and elementary school courses.

e. Intensive educational programs and conferences on traffic safety and operation principles should be extensively conducted.

2. Within State and particularly in municipal jurisdictions, there are many public officials and groups whose efforts are directly or indirectly related to traffic safety. Planners, housing officials, engineers of highway and street design, construction, maintenance, and operation, police, educators, and the various safety organizations and civic groups are examples of this distribution of interest. There is a genuine need for a practical means for effectively coordinating the everyday and long-range safety efforts of such individuals and groups. It is recommended that appropriate administrative action be taken, particularly in municipalities, to bring about an effective coordination of traffic operation and safety activities.

3. Highway planning surveys conducted cooperatively between States and the Federal government provide the essential facts with which to develop long range improvement programs to achieve safety. It is recommended that this important work be revitalized and extended to include urban as well as rural areas.

4. Recognizing that greater safety on the highway can be obtained by a more intensive application of sound engineering and maintenance measures, it is recommended that trained engineers with proper experience be placed in the appropriate organization structures and given adequate remuneration and assurance of continuity in tenure of their positions.

5. In specific recognition of the need for better staffing of official agencies concerned with highway engineering problems, it is recommended that there be established:

a. In each State highway department, a division responsible for the application of engineering measures in the field of traffic operation and control. This division should be comparable in authority to other principal divisions, such as design, construction, and maintenance. It is very important that engineers trained in traffic operation principles be employed also in the design division.

b. In cities having more than 100,000 population, a traffic engineering unit comparable in authority and influence to other major divisions of the department of public works or corresponding organization.

c. In cities having between 50,000 and 100,000 population, at least one full-time traffic engineer vested with sufficient authority to insure the adoption of appropriate engineering measures for traffic operation and safety.

d. In cities having less than 50,000 population, an engineer, preferably the director of the department of public works, the city engineer, or some member of his staff, with qualifications and experience necessary to perform the functions of traffic engineering.

e. County highway departments required to handle traffic problems of similar magnitude should be staffed in a manner consistent with the above recommendations.

6. It is recommended that every effort be made to continue and advance uniformity in roadway signing, signaling, and marking, in the design of roadways and structures, and in lighting devices and safety appurtenances required or used on motor vehicles. Administrative authorities are urged to follow the general standards recommended elsewhere in this report.

7. It is recommended that greater weight be given to traffic engineering and safety considerations at the design stage of vehicles and highways. Such considerations have, in the past, been subordinated on occasion to matters of appearance and economics. Safe utility of a vehicle or highway is best assured when safety features are built in at the time of construction.

8. It is recommended that diligent examination and study be made of all exisiting roads and streets to detect locations of undue hazard and to correct or improve such conditions through application of the appropriate engineering or control measures.

9. It is recommended that there be established an effective and continuing liaison among motor-vehicle manufacturers, road builders, and operations engineers for the purpose of promoting closer coordination of (1) vehicle design, (2) the geometric and structural plans for streets and highways, and (3) the plans for operation. Such liaison will have its maximum value if the participants are persons of high rank in the phase of highway transportation which they represent.

10. Traffic safety should receive greater emphasis in urban redevelopment and new land development plans. It is recommended that housing, planning, and engineering officials engaged in or responsible for such work consider the traffic safety features of all such proposals and introduce, wherever justified, added facilities or revised street and land use plans to accommodate in a safe manner the travel requirements of the motorists and pedestrians affected. Cooperative action between planning authorities and highway and traffic engineers can do much toward minimizing accident hazards.

11. It is recommended that research into human and physical factors relating to traffic safety be greatly extended and intensified. Agencies in a position to conduct such research

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	ONE WAY	ONW-137	18" x 24"	5.20	4
	*ARROW	TRN-117	24" x 24"	6.25	5
	**SPEED LIMIT	SLM-139	18" x 24"	5.20	4
	SLOW	SLW-106	24" x 24"	6.25	5

*Specify direction of arrow ____ Left Right____ **Specify MPH Wanted ____ MPH

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should be urged to undertake projects and to contact the Highway Research Board of the National Research Council, which is in a position to suggest worthy projects and otherwise to aid as a research "clearing house."

12. It is recommended that definite provisions be made for the modernization of all principal highways and streets so as to furnish safe traffic-operating conditions for the foreseeable future.

13. In proceeding with a modernization program, the standards, policies, and guides developed after exhaustive traffic and engineering investigations by the American Association of State Highway Officials, the Public Roads Administration, and other appropriate agencies, are recommended for general application.

14. It is recommended that sufficient width of right-of-way be acquired, and the necessary access control be provided, on arterial routes so as to reduce hazard, increase the ease of driving, minimize obsolescence, and protect the investment of the improvement.

15. It is recommended that the improvement of the farm-to-market, to school, to home, to work types of secondary roads and streets be such as to make them safe for year-round use.

16. In recognition of the unusual hazards at railway and highway crossings at grade, it is recommended that these crossings be eliminated with priority determined on the basis of hazard and economy of traffic operation. Provision should be made for adequate protection of existing railway grade crossings where the construction of separation structures is not feasible. Full and consistent use of the Federal funds authorized under existing Highway Acts of the Congress for railway grade-crossing elimination and protection is recommended.

17. It is recommended that sidewalks and other pedestrian facilities be provided by appropriate means on highways and streets where justified by the volume and character of vehicle and pedestrian traffic.

18. It is recommended that a combination of highway maintenance operations be so conducted as to provide a smooth, skid-resistant surface; safe, even shoulders; adequate drainage; and a clear right-of-way.

19. It is recommended that modernized street lighting be applied on main urban streets and on the more hazardous sections of highways, particularly near the entrances to municipalities, where there is considerable pedestrian traffic. The recently issued "Recommended Practice of Street and Highway Lighting" of the Illuminating Engineering Society will be a helpful guide in this work.

20. With further respect to visibility, it is recommended that means be employed to utilize vehicle headlighting to better advantage by designing structures and other roadway elements with surfaces of such color, texture, light-reflecting quality, area, and geometric position with respect to approaching vehicles that the presence, dimension, and position of these roadway elements will be disclosed to the maximum extent practicable. Reflecting delineators are also recommended as a method of achieving substantial reduction of night accidents.

21. Traffic hazards can frequently be reduced by relatively simple or localized engineering treatments. The following are recommended as typical applications:

a. Use of raised median strips on wide, heavily traveled streets.
b. Use of adequate turning radii at intersections.
c. Intersection channelization.
d. Provision of additional lanes on grades and at railroad crossings for trucks and buses and of special facilities for unloading and loading mass transit vehicles.

22. It is recommended that appropriate authorities adopt as a working standard the Manual on Uniform Traffic Control Devices, prepared by joint effort of the American Association of State Highway Officials, the Institute of Traffic Engineers, and the National Conference on Street and Highway Safety. The manual, a revision of which will be issued this year, contains recommended practice for the application, design, location, installation, and maintenance of highway signs, traffic signals, pavement markings, and islands. Substantial conformance with its provisions on streets and highways built with Federal funds is required by the Federal-Aid Highway Act of 1944.

23. It is recommended that the basic principles of Article VI of Act V of the Uniform Vehicle Code be adopted. Article VI provides for the establishment of speed restrictions and, among other provisions, authorizes speed zoning and prescribes separate day and night speed limits.

24. The principle of speed zoning, based on adequate factual investigation, is recommended for wider application. The practice of marking safe operating speeds on curves is especially commended.

25. It is recommended that the practice of establishing low speed limits but permitting high tolerances be discontinued.

26. It is recommended that full use be made of all pertinent and available facts on traffic operation in the design, redesign, and control treatment of streets, highways, and vehicles. A guide manual of proven traffic engineering techniques is now being prepared by a Joint Committee on Street and Highway Traffic Engineering Functions and Administration, composed of officials of the American Association of State Highway Officials, the American Public Works Association and the Institute of Traffic Engineers.

27. It is recommended that plans be made for the provision of off-street parking facilities as the ultimate solution of the parking problem in congested metropolitan areas. These facilities should be designed and located with respect to terminal requirements and, wherever practicable, with ready access to preferential type streets.

28. It is recommended that the best possible use be made of curb parking space. Angle parking, though it accommodates more cars along the cu b, frequently creates hazard and interference with moving traffic.

29. It is recommended that additional use be made of the one-way street principle, wherever practicable, to increase street capacity and improve safety.

30. It is recommended that channelization be used more extensively to guide vehicles on a safe course through large-area intersections and to provide safe refuge points for pedestrians.

31. To increase further the protection afforded the pedestrian, additional facilities, such as loading islands, marked crosswalks, sidewalks, overpasses and underpasses, and barricades, should be constructed where pedestrian and vehicle volumes and roadway conditions warrant.

32. It is recommended that consideration be given to the segregation of vehicles according to their performance characteristics. Designation of certain streets, routes or separate lanes for special classes of traffic, such as trucks or busses, may often facilitate movement and reduce operating hazards.

33. The limits of vehicle size and weight recently proposed by the American Association of State Highway Officials after ratification by a majority of the States, are recommended for general adoption.

34. Because of the loss in motor-vehicle development effort occasioned by the war, it is recommended that particular effort now be directed toward continued improvement in all elements of vehicle design affecting safety.

35. It is recommended that there be strict enforcement of laws concerning the use of lower beams from headlamps.

36. It is recommended that there be strict enforcement of laws regarding overloading of commercial vehicles.

37. It is recommended that the manufacturer's authorized gross vehicle weight be used as a basis for the registration of trucks to control vehicle overloading.

38. In the interest of improving uphill performance of commercial vehicles, it is recommended that stress be placed on the maintenance of proper relationships between the gross vehicle weight of trucks and combinations and the horsepower output of their engines.

39. Statutory periodic inspection of motor vehicles is recommended, since it is an essential part of a complete safety program. Such inspections should be made in government-owned and operated stations.

40. With further respect to motor-vehicle inspection, it is recommended that the procedure employed be based on the American Standard Inspection Requirements for Motor Vehicles. Efforts to improve instrumentation for safety inspection work should be continued.

41. It is recommended that steps be taken to see that all car and truck dealers are equipped to give and promote adequate headlight service.

42. It is recommended that everything possible be done to make an increasing supply of tires available at the earliest possible moment so that badly worn, unsafe tires now in use can be replaced.

43. It is recommended that there be no provision for limitation of maximum speeds by the compulsory use of governors.

44. As vehicle sizes and weights increase, special attention should be given to the design, manufacture, installation and maintenance of brake mechanisms to reduce insofar as feasible the adverse brake performance characteristics of such heavier vehicles when fully loaded as compared to the brake performance of passenger automobiles.

TRAFFIC SAFETY AND PEDESTRIAN PROTECTION CONTEST WINNERS

Five states and twelve cities were honored for outstanding safety activities May 9th in ceremonies featuring the second day of the President's Highway Safety Conference.

The awards were made in connection with the fourteenth annual national traffic safety contest sponsored by the National Safety Council and the seventh annual pedestrian protection contest sponsored by the American Automobile Association.

With Major General Philip B. Fleming, Federal Works Administrator, presiding, the presentations were made by Ned H. Dearborn, President of the National Safety Council and H. J. Brunnier, President of the American Automobile Association. The ceremonies were highlighted by an address by Clare Boothe Luce, Congresswoman from Connecticut.

Grand award winner of the National Safety Council's contest was Iowa, with other first place prizes going to Connecticut, Texas and Utah. Kansas took top honors in the AAA's pedestrian protection contest.

Among cities, Detroit, Michigan, was the winner of the grand award.

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THE PLAN OF ACTION TO MOTIVATE CONFERENCE PROGRAM

To mobilize on a Nation-wide basis the active public support essential to the program recommended, and in view of the urgent challenge which highway safety presents to every community and State in America, the Conference strongly urges that the following action be undertaken without delay:

1. That three committees of independent and equal status be formed for the purpose of coordinating a highway traffic safety program on a nation-wide basis.

a. *Coordinating Committee for Federal Departments.*—A federal committee should be designated consisting of representatives of such Federal Departments or subdivisions thereof as have legal responsibilities in the field of highway safety, such as, but not limited to: Public Roads Administration, Interstate Commerce Commission, Bureau of Standards, Bureau of the Census, United States Office of Education, Federal Bureau of Investigation, Federal Interdepartmental Safety Council, Department of Agriculture, War Department, and Navy Department. The functions of said Committee should not supersede the individual agencies in their statutory responsibilities. Such Committee should:

1. Coordinate the highway safety activities of all Federal agencies.
2. Encourage cooperation in highway safety activities of the Federal Government with the agencies of the several State and local governments through the committee of officials outlined in Section 1 (b).
3. Encourage cooperation in highway safety activities of the Federal Government with those of national nonofficial organizations through the national committee outlined in Section 1 (c).

b. *National Committee of State Officials.*—The highway safety activities of the several State governments should be coordinated through a committee comprising the presidents of associations of State officials, such as, but not limited to: American Association of Motor Vehicle Administrators, International Association of Chiefs of Police, American Association of State Highway Officials, National Association of Railroad and Utility Commissioners, National Association of Chief State School Officers, and Association of State and Territorial Health Officers. This committee should:

1. Appraise existing conditions within the States, utilizing the technical recommendations of The President's Highway Safety Conference as a measuring stick to determine exactly what is needed to develop effective, official highway safety programs.
2. Fully coordinate their highway safety activities and jurisdictions.
3. Acquaint the public with the results of their analysis and comparison, and the outcome of their coordination, to the end that organizations and individual citizens shall know exactly what items constitute the official highway safety programs.
4. Work closely with the Coordinating Committee for Federal Departments in a supporting, advisory, and consulting capacity.

c. *National Committee of Non-Official Organizations.*—Organized public support for the recommendations of The President's Highway Safety Conference should be secured nationally by a committee representative of national civic, service, business, fraternal,

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professional, labor, farm, and similar men's, women's and youth organizations, interested in traffic safety. Such committee should:

1. Serve as a clearing house and coordinating agency for all such national organizations.
2. Should not function as an operating organization conducting a separate activity program but rather should advise, stimulate, and otherwise assist in the development of the traffic safety programs of its participating organizations. Such assistance should not imply direction of the traffic safety programs of individual organizations.
3. Work closely with both the Coordinating Committee for Federal Departments and the committee of presidents of associations of State officials in a supporting, advisory, and consulting capacity. The National Committee for Traffic Safety, expanded, might well be the organization for this undertaking.

2. That the Governor of each State should establish a Coordinating Committee of Officials for the official State highway safety program. This Committee should consist of the heads of State departments charged with or related to highway safety, such as, but not limited to: Commissioner of Motor Vehicles, Chief of State Police or Highway Patrol, Commissioner of Highways, Chairman of the Public Utilities Commission, State Superintendent of Public Instruction, and State Director of Health, or their counterparts as found in the various forms of governmental organization. That such Coordinating Committee should:

a. Appraise existing conditions within the State, utilizing the technical recommendations of the President's Highway Safety Conference and other pertinent information and facts as a measuring stick to determine exactly what is needed to develop an effective, official State highway safety program.
b. Fully coordinate their highway safety activities and jurisdictions.
c. Acquaint the public with the results of their analysis and comparison, and the outcome of their coordination, to the end that organizations and individual citizens shall know exactly what items constitute the official highway safety program.
d. In consultation with representatives of State organizations of municipal and county officials, arrange means of close cooperation and coordination between local and State official activities.

3. That the Governor of each State should meet the challenge of the current critical traffic accident situation by calling a State Highway Safety Conference. Such a Conference should be the means of presenting to the public the findings and actions of the Coordinating Committee of Officials. The personnel of this Conference should include both governmental officials and the public, as represented by organizations and by individuals. Each State Highway Safety Conference should among other things discuss and take action on the following items:

a. Adaptation of the technical highway safety program approved by The President's Highway Safety Conference to the needs of the particular State, but with the clear understanding that adaptation does not mean the lowering of any minimum standard set by the program.
b. The working relationship to be established between the Coordinating Committee of Officials and the Statewide traffic safety organization, as defined in Section 4 of these recommendations.
c. Periodic review of the official State highway safety program by the Coordinating Committee and the support-

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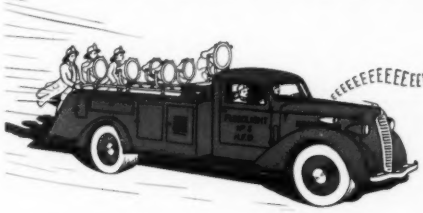

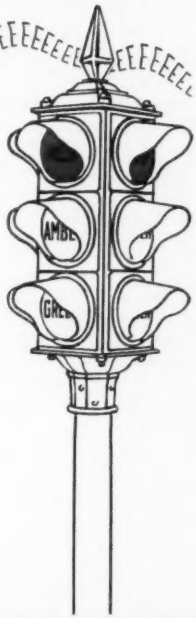

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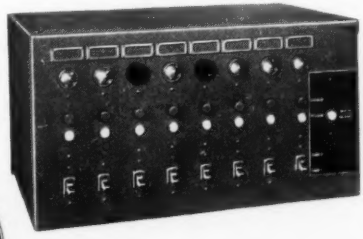

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ing safety organization to determine where the program stands and what still needs to be done.

d. The method of financing the State-wide traffic safety organization, whether by private funds, State funds, or both.

4. That, coincidentally with the calling of a State Highway Safety Conference, the Governor is the logical person to take the leadership in seeking the establishment of a Statewide traffic safety organization where none now exists. Such organization must be entirely free from partisan politics, and should offer full and complete opportunity for public expression and participation through a membership of representatives of all State-wide organizations able and willing to contribute to the solution of the traffic safety problem, a representative of each local safety committee, and outstanding individuals selected because of their particular interest. In order that it may be an effective instrument of support for the official highway safety program of the State, this organization should operate on the following basis:

a. As a supporting, advisory, and consulting group for the official State highway safety program, working closely with the Coordinating Committee of Officials.

b. With a full-time, paid Executive Director, and such employed staff as is consistent with the size of the organization and its program. Continuity and stability of such an organization are more generally assured when the public character of the project is recognized by providing the major portion of the necessary financial support from public funds.

5. That the chief executives of county and municipal governments, with the impetus given by national and State conferences, should follow the same procedures as those suggested for the States by doing the following:

a. Establishing a Coordinating Committee of Officials.

b. Analyzing existing local conditions in highway safety in comparison with the technical program approved by The President's Highway Safety Conference and the State Highway Safety Conference.

c. Securing the establishment of a local traffic safety organization in metropolitan areas, cities or counties where no safety organization is actively carrying on a traffic safety program.

d. Calling a Local Highway Safety Conference for consideration of items similar to those listed for State Conferences.

6. A number of States already have a Coordinating Committee of Officials and a State-wide safety organization carrying on a comprehensive traffic safety program. In such cases new organizations are obviously unnecessary, but a State Highway Safety Conference should be called to review the existing State program and to provide for the inclusion of the other recommendations of this Conference in their going program. If only one of the two organizations exists, the other should be created coincidentally with the calling of the State Conference. Similarly, new organizations are unnecessary in localities where adequate programs are presently being conducted.

7. That national, State and local organizations endorse and support, within the limits of the objectives set forth in their charter or constitution, the recommendations of The President's Highway Safety Conference and the official highway safety programs of State and local governments.

8. That national, State, and local organizations utilize every possible means to inform their membership as to the technical highway safety program approved by The President's

Highway Safety Conference, and the problems of fitting this program to the needs of the several States, counties and municipalities. In the discharge of this responsibility, it is urged that all State and local units of national organizations allot time on their programs for the presentation of local needs in highway safety, thus to secure a greater degree of understanding and individual acceptance of responsibility.

9. That all national organizations immediately seek full and continuing support of their State and local units for:

a. Cooperation and active participation in the State and local highway safety conferences.

b. Cooperation and active participation in the State and local traffic safety organizations.

10. That all national organizations, and through them their State anl local units, endorse and secure continuing active support for such broad and important supplemental highway safety programs as the Police Traffic Safety Check, the National Traffic Safety Contest, and the National Pedestrian Protection Contest.

EIGHTH NATIONAL INSTITUTE FOR TRAFFIC TRAINING AT CORVALLIS

Sponsored by Oregon State College, the Eighth National Institute for Traffic Training, Western Region, will open at the College in Corvallis, Oregon, June 17, for a two-week session.

Of special interest is the Traffic Engineering Course, organized and directed by Wilbur S. Smith, Member, I.T.E., and associate director, Yale Bureau of Highway Traffic.

Traffic engineering sessions are to be held in the morning and afternoon during the two-week period and will embrace such subjects as follows:

Organization and Orientation; Elements of Highway Operations; Objectives and Elements of Traffic Studies and Regulations; Studies of Traffic Volume, Origin and Destination, Speed and Speed Zoning, Accidents, Observance, Parking, Planning, and Research.

Sessions will also be devoted to Control Devices, Traffic Design, Channelization Theory, Highway Economics, Finance, and Public Relations in addition to other subjects too numerous to mention here.

Those taking active part in the presentation of the subjects in addition to Wilbur Smith are:

Theodore Matson, Arch Bollong, Dan O'Flaherty, Winston Carsten, J. A. Head, F. T. Fowler, F. B. Crandall, Wm. A. Bowes, Harry Aumack, Condi McCullough, Hugh Wynn, D. E. Morris, Burton Marsh, G. Howie, N. Kennedy, W. J. Weller, R. Forrester, Norman Key, A. E. Neyhart, D. H. Baldwin, Earl Campbell, and R. H. Baldock.

Professor Bob Glenn of Oregon State College is coordinator of the courses which, in addition to traffic engineering will include Traffic Police Operations, School Transportation, Driver Training, Accident Records and their use, and a Seminar on Public Information and Public Relations.

CAPACITY OF INTERSECTIONS BEING INVESTIGATED

A comprehensive study of intersection capacities is being undertaken by members of the Committee on Highway Capacity of the Highway Research Board in connection with their assignment to prepare a manual on the traffic capacity of roadways and intersections under urban and rural conditions. The announcement was made by O. K. Normann, Chairman of the Committee on Highway Capacity. Mr. Normann is Chief, Section of Traffic Operations, Public Roads Administration.

To fix the relation between capacity and such factors as the number of traffic lanes, lane width, type of traffic, gradient, alinement, restrictive lateral clearances, type of traffic control, presence of bus or streetcar stops, and parking provisions, the committee is processing all authoritative data that have been published on these subjects and have devised two forms for the collection of unpublished material. Although the members of the committee have completed these forms for the data available in their files and have received considerable data from other sources, a much larger volume of information is needed to establish facts that may be used to advantage by men in the traffic engineering profession. Many traffic engineers have already received a supply of the forms and are urged to fill them out. Others who possess complete data relating to observed peak traffic volumes either on roadways or at intersections are urged to request the necessary forms and submit such data to the committee. The form used to record maximum observed hourly traffic volumes on roadways is shown on the following page. A similar form which may be completed with a minimum of effort is

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used to record maximum observed intersection volumes. These forms together with necessary instructions for completing them may be obtained from the Secretary of the Institute of Traffic Engineers or directly from the Highway Research Board at Washington, D. C.

The issuance of the manual which is so badly needed at the present time by highway and traffic engineers will be greatly facilitated by the assistance received in the collection of the data from ITE members whose files should undoubtedly be the most fruitful source of the desired type of information.

FORM HCS-2.—MAXIMUM OBSERVED HOURLY TRAFFIC VOLUMES ON ROADWAYS

City Washington
State D.C.
Data furnished by Sample
Title

1. STREET OR HIGHWAY 14th St Bridge
   LOCATION U.S. Highway #1

2. TYPE OF LOCATION (check one)
   Downtown ____
   Intermediate ✓
   Outlying ____
   Rural ____

3. TYPE OF AREA (check one)
   Business ____
   Industrial ____
   Residential ____
   Park ✓
   Undeveloped ____

4. TYPE OF FACILITY (check one)
   Rural highway ____
   City street ____
   Arterial ✓
   Expressway ____

5. TRAFFIC MOVEMENT (check one)
   1-way constant direction
   1-way reversible ____
   2-way divided ____
   2-way undivided ✓

6. MEDIAN WIDTH IN FEET, IF ANY None

7. PEDESTRIAN SAFETY ISLAND WIDTH IN FEET, IF ANY None

8. CURB HEIGHT IN INCHES, IF ANY 5

9. CLEARANCE FROM CURB OR PAVEMENT EDGE TO VERTICAL OBSTRUCTIONS 0

10. CAN DISABLED VEHICLES USE AREA OUTSIDE OF PAVEMENT? Yes ___ No ✓

RECORD DATA APPLICABLE TO DIRECTION OF HEAVY TRAFFIC MOVEMENT DURING HOUR OF MAXIMUM FLOW IN COLUMN NUMBER 1 AND DATA FOR OPPOSITE DIRECTION IN COLUMN NUMBER 2

		Column no.1	Column no.2
11.	DIRECTION OF FLOW	N.B	S.B
12.	SURFACE WIDTH IN FEET	20	20
13.	NUMBER OF MOVING LANES	2	2
14.	NUMBER OF PARKING LANES	0	0

COMPLETE ITEMS 15-17 FOR ROADWAYS ADJACENT TO INTERSECTIONS

15.	CHECK COLUMN FOR TRAFFIC ENTERING INTERSECTION		
16.	BUS STOP LOCATIONS, IF ANY		
	Near side		
	Far side		
	Mid-block		
17.	STREETCAR STOPS, IF ANY		
	Near side		
	Far side		
	Mid-block		
18.	MAXIMUM OBSERVED HOURLY VOLUME:		
	Passenger cars	2611	1111
	Busses	108	79
	Trucks	231	190
	Streetcars	0	0
	Total	2950	1400

19. DATE MAXIMUM VOLUME WAS OBSERVED: June 8, 1943 Hour 8-9 AM

20. DID ANY TRAFFIC SIGNAL AFFECT MAXIMUM FLOW? Yes ✓ No ____ (check one)
    If so, directly ____ or indirectly ✓
    Length of GO period in seconds 42
    Total cycle length in seconds 80

REMARKS: Traffic light (item 20) had a very slight effect, if any, on maximum flow. Number of traffic lanes at the intersection was greater than that on the bridge. Other roadways also entered the approaches to the bridge.

OFFICIAL TRAFFIC ORGANIZATIONS IN CITIES AND STATES

From the Report of the Eno Foundation for Traffic Control, Inc., Saugatuck, Conn.

Due to numerous requests for information relative to the organization and administration of Traffic Engineering Departments in cities and states, the Eno Foundation conducted a questionnaire survey of 211 cities and the 48 states to obtain specific information. The 100 page Survey Report was published in Dec. 1945 in mimeographed form and is now being printed for wider distribution. Copies will be available, free, to interested officials and agencies desiring the information, from the Eno Foundation.

Cities With Traffic Engineers

Of 78 cities reporting, it was found that 43, or 55 per cent, have Traffic Engineering Bureaus or agencies. The others, 45 per cent, reported no formal traffic engineering activities. There is a very definite indication that the largest cities more frequently have traffic engineering organizations than the smaller ones.

Location of Traffic Engineering Divisions in Cities

Of the 45 cities reporting traffic engineering divisions, 16, or 37 per cent, have the activities in the engineering divisions, 16, or 37 per cent, have the activities in the engineering or public works department. Eight, or 19 per cent, of these cities have established the functions as a separate city department or bureau. Seven, or 16 per cent, place the traffic engineering bureau in the department of public safety, and, another seven, or 16 per cent, place it under the police department.

In 3 cities, 7 per cent, the traffic engineering division is in the city traffic commission; in one, it is in the city planning department; and in one it is under the department of motor vehicles and traffic.

Methods of Appointment

Fifteen of the 43 cities, 35 per cent, reported the heads designated according to civil service standards. In an almost equal number of cities, 13, or 30 per cent, the appointments are made directly by the head of city government, either the mayor or city manager. In 6 cities, 14 per cent, appointments of traffic engineering heads are by city engineers or directors of public works. In 3 cities, 7 per cent, the director of public safety selects, or appoints, the traffic head. In 2 cities the city council or city commission makes the selection. In another 2, a traffic commission of the city makes the appointments. In only one city is the traffic engineering head designated by the head of the police department.

CITIES WITH TRAFFIC ENGINEERS

Size of Cities Population	Number Reporting	Have Traffic Engineer No.	Have Traffic Engineer %	No Traffic Engineer No.	No Traffic Engineer %
50,000 — 100,000	28	9	32	19	68
100,000 — 200,000	21	10	48	11	52
200,000 — 500,000	21	16	76	5	24
over 500,000	8	8	100	0	0
Total	78	43	55	35	45

In cities without traffic engineering organizations, the traffic engineering functions are almost always handled primarily by the police.

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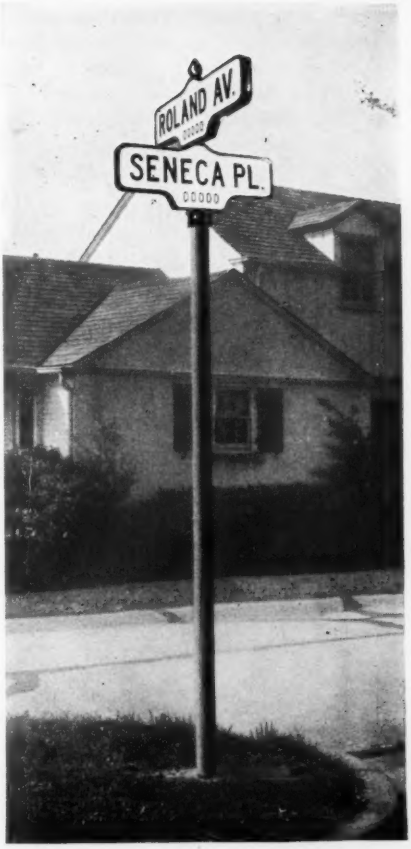

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State Traffic Engineering Organizations

Thirty-five of the 45 states reporting, 78 per cent, indicated the existence of traffic engineering, or equivalent divisions, in normal peacetime operations. The southern states were not generally found to have these divisions in the same ratio as the other states; however, almost three-fourths of the southern states reported divisions which deal primarily with traffic engineering matters. In 10 states which did not report traffic engineering divisions, there was an indication that the maintenance engineers carry out the functions in 4 cases, the state police in 4, the safety department of the highway commission in one, and the state planning commission in one.

In 27 of the 35 states, 77 per cent, the head of the traffic engineering or equivalent division reports directly to the state highway engineer. In 4 states, 11 per cent, the traffic head reports to the maintenance engineer, and in only one state, 3 per cent, is the traffic head reporting directly to the commissioner of highways.

In the remaining 3 states, 9 per cent, the head of the traffic division reports to some other division head of the highway department, i. e., design engineer, patrol supervisor, and planing engineer.

THIRD NEW ENGLAND TRAFFIC ENGINEERING CONFERENCE

The Third New England Traffic Engineering Conference Committee recently announced the final program slated for the three-day conclave being held at the Massachusetts Institute of Technology, June 11, 12 and 13, 1946. In making this announcement, the Committee urged all interested traffic and transportation officials in the New England area and elsewhere to attend the Conference in the interest of benefiting themselves from the wealth of knowledge to be brought by the Conference speakers, and to contribute to the discussions from their own store of experience in traffic engineering.

The Program

"Attacking the Traffic Problem," C. B. Breed, professor of Civil Engineering, Massachusetts Institute of Technology.

"Holding the Line on Motor Vehicle Accidents," Wm. Greene, Director, Connecticut Safety Program.

"Pedestrian Protection," T. M. Matson, Director, Yale Bureau of Highway Traffic.

"Speed Zone Studies in Connecticut," W. H. Sharp, Connecticut State Highway Department.

"Traffic Surveys for Urban Planning," E. H. Holmes, U. S. Public Roads Administration.

"Coordination of Federal and Local Design Standards," D. W. Loutzenheiser, U. S. Public Roads Administration.

"Connecticut's Urban Highway Program," Wm. J. Cox, Commissioner, Connecticut State Highway Department.

Three talks to be delivered on the subject of Parking, by Nathan Cherniack, Economist, Port of New York Authority, Robert Mitchell, Philadelphia City Traffic Engineer, and Lloyd Braff, DeLeuw-Cather Company.

Three talks to be delivered on Traffic Planning by Harold F. Hammond, American Transit Association, Peter Hale, City Planning Engineer, New Haven, Connecticut, and Grant Mickle, Traffic Engineer, Automotive Safety Foundation, and discussion of these three talks by Frederick J. Adams, Professor of City Planning, Massachusetts Institute of Technology.

A Symposium on Boston's Traffic Problem

Harold Duffy, Mass. State Planning

Board, Joseph Cressy, Mass. Highway Planning Survey Manager, and Phillip Kittfield, Mass. Dept. of Public Works, will review and discuss Boston's traffic problems of accidents and congestion.

A Symposium on Proposed Plans For Boston

H. Stanley Parker, Chairman, Boston Planning Board, W. J. McDonald, Ellewyn Brehout, Boston Chamber of Commerce and T. T. McCrosky, Greater Boston Development Commissioner, will review and discuss proposed plans for improving Boston traffic.

The Conference is being sponsored by the Traffic Engineering Section of the Massachusetts Department of Public Works and the Massachusetts Institute of Technology. The National Conservation Bureau is coordinating the affair.

SUCCESSFUL CONNECTICUT TRAFFIC ENGINEERING CONFERENCE

The Third Connecticut Traffic Engineering Conference, jointly sponsored by the Yale Bureau of Highway Traffic and the Connecticut Highway Safety Commission, was held in New Haven on May 16th. City and town engineers from all the major Connecticut municipalities attended a one-day session which was divided into four parts: (a) Route Planning Through Urban Areas; (b) Channelization at Urban Intersections; (c) Off-street Parking; and (d) How the President's Highway Safety Conference Affects Connecticut Municipalities.

This session of the Conference was

Those attending and participating in the Third Connecticut Traffic Engineering Conference

characterized by the emphasis placed on practical problems and discussions by the members. It was generally agreed that getting away from the school room approach was highly successful and that the enthusiasm and seriousness of the member participation is an exceedingly healthy sign for the future of traffic engineering consideration in city and town engineering departments.

In the state of Connecticut there is but one city which employs a traffic engineer. Therefore, traffic engineering responsibility has been somewhat neglected in other cities. Traffic engineering, of an emergency nature, has been done by the police in the past but as the result of these Conferences and other efforts, the city engineers are assuming their proper responsibilities.

The following members of the I.T.E. took part in the Conference:

Wilbur S. Smith	J. A. Carothers
Theodore M. Matson	C. S. LeCraw, Jr.
Taylor D. Lewis	L. T. Scott-Smith
Fred Hurd	Earle Osterhoudt

21 MEN COMPLETE TRAFFIC ENGINEERING STUDIES AT YALE

Twenty-one men have just completed a graduate course in Traffic Engineering at Yale University. The course required a full academic year of graduate study in such matters as the basic theory and practice of traffic regulation, design, planning and administration, dealing with problems of safety and expeditious movement in highway transportation.

"The training of these men and their return to active positions in public service is especially timely in view of the rising toll of traffic accidents and the waste of community resources through congestion," stated Professor Kent T. Healy, Chairman of Yale's Committee on Transportation, in commenting on the work. "These men represent all parts of the United States from the three Pacific coast states to Texas, Florida, North Carolina and Virginia, as well as the northeastern states, including Connecticut. In addition, the Province of Quebec and the City of Montreal on the north, and areas as far west as Hawaii, were represented. Three of the men came to Yale from China."

These men represent various branches of state highway departments and city agencies. They came from state highway traffic engineering departments as well as planning, design, maintenance and bridge divisions. The men from urban areas came from traffic engineering divisions, departments of public safety, and city planning commissions.

These men will go out to join 131 men already in the field who have completed the course of study of the Yale Bureau of Highway Traffic. The great majority of these men, once having specialized in traffic work, are challenged more than ever with the need for such work and continue in active service.

"Traffic is no longer a problem which can be solved by the layman," said Mr. Healy. "The complexities of gaining safety and efficiency of movement in highway transportation requires special skills and demands professional training and experience."

The names and positions of the men completing the course are:

Robert A. Burch, Traffic Engineering Department, North Carolina State Highway & Public Works Commission, Raleigh, N. C.

M. Earl Campbell, State Highway Planning Division, West Virginia State Road Commission, Charleston, West Virginia.

J. Anthony Carrothers, Engineer Division, City of Detroit, Michigan.

Philippe L. Ewart, Quebec Department of Highways, Montreal, Quebec.

Adrien Genest, City Planning Division, City of Montreal, Quebec.
Stewart M. Gourlay, Dept. of Street Railways, City of Detroit, Michigan.
Theodore L. Gustafson, Design Division, Conn. State Highway Dept., Hartford, Conn.
J. Spencer Howerton, Dept. of Public Safety, City of Richmond, Va.
George W. Howie, Jr., Traffic Engineering Div., City of Portland, Oregon.
David S. Johnson, Planning Div., Conn. State Highway Dept., Hartford, Conn.
W. Norman Kennedy, Traffic Div., Wash. State Dept. of Highways, Olympia, Wash.
Charles S. LeCraw, Eno Foundation for Highway Traffic Control, Saugatuck, Conn.
T. P. Liang, Chinese National Highway Administration, Nanking, China.
Gee Lin, Chinese National Highway Administration, Nanking, China.
C. M. Liu, Chinese National Highway Administration, Nanking, China.
Fred J. Manning, Traffic Division, City of Miami, Florida.
Robert G. Mitchell, Design Division, Conn. State Hwy. Dept., Hartford, Conn.
Earle W. Osterhoudt, Traffic Control Div., Conn. State Hwy. Dept., Hartford, Conn.
William R. Welty, Traffic Engineering Div,, Texas Highway Dept., Austin, Texas.
Melbourne H. West, Traffic Div., California Div. of Highways, San Diego, Cal.
F. Houston Wynn, Honolulu City Plan Commission, Honolulu, Hawaii.

Panel of Traffic Experts on N.B.C.

On May 8th, during the President's Highway Safety Conference, a 25 minute question and answer period where methods of relieving traffic headaches were discussed, was broadcast over the N.B.C. network. The President's Conference was also outlined briefly during the program which took place at N.B.C.'s Washington Station, WRC.

Those taking part in the program and shown above left to right are, T. J. Seburn, Pres., Institute of Traffic Engineers and Traffic Engineer, Kansas City, Missouri; Leslie J. Sorenson, Vice-President for Traffic and Transportation, National Safety Council and Chairman, Chicago Street Traffic Commission; George E. Keneipp, newly-appointed Director of Vehicles and Traffic, Washington, D. C.; Ray H. Leavitt, Regional Vice-President of the American Association of State Highway Officials and Chairman, Utah State Road Commission.

ITE NEWS AND PERSONALS

ITE Officers and Board Of Directors Meet

Officers and members of the Board of Direction of the Institute, met in Washington, D. C., on May 8th and 10th.

Graham Cole, chairman of the Handbook Revision Committee, reported the work of his committee. Don McNeil, chairman of the Annual Meeting Committee, also reported. Sessions and activities for the Annual ITE Meeting, to be held in Columbus, Ohio, October 3rd, 4th and 5th, 1946, were discussed and decided upon.

(In case you haven't done so, better make your reservations at the Deshler - Wallick Hotel in Columbus — pronto!)

Washington Section ITE Holds Meeting

The Washington Section held a dinner meeting at the Hotel Fairfax on May 8th. The meeting was arranged to coincide with the President's Conference with the result that it was well attended by visiting ITE firemen and guests.

Sidney Steinberg, Dean of the College of Engineering, University of Maryland, was the principal speaker. His interesting talk on Latin America was based on his recent inspection tour of South American highways.

George Keneipp was recently appointed Director of Vehicles and Traffic for the District of Columbia to fill the vacancy created when former director and ITE member, William Van Duzer passed away recently.

Mr. Keneipp was formerly Washington Manager for the Keystone Auto Club. The engineering post of Assistant Director, Department of Vehicles and Traffic has not yet been filled.

MEMBERSHIP ELECTIONS

The following men were elected for membership in the Institute of Traffic Engineers at the May 8th Board of Direction Meeting in Washington, D. C.

New Member

John D. Cruise
Ass't Director
Planning & Traffic Div.
Michigan State Hwy. Dept.

New Associates

John P. Mills, Jr.
Assoc. Traffic Statistician
Traffic & Planning Div.
Richmond, Virginia

Hallie Myers
Major, USA
Operations Div.

New Juniors

Charles LeCraw
Yale Bureau of Highway Traffic
(student)

Fenton Jordan
Traffic Engineer
Norfolk, Virginia

Transfers, Associate to Member:

James E. P. Darrell
Victor G. Hofer
Robert S. Holmes
Taylor D. Lewis
Leslie Williams

Arthur Blanchard was reinstated to full member.

Colonel Light B. Yost, Executive Director, The President's Highway Safety Conference, was recently elected to Associate membership of the Institute of Traffic Engineers. Colonel Yost was formerly an Affiliate Member.

Mr. Robert Dier, a graduate of the Yale Bureau of Highway Traffic, who has been with the Illinois State Highway Department, the Georgia State Highway Department, and for the last two years with the Traffic Engineering Department of the City of Seattle, has accepted a position as the assistant highway engineer for the Standard Oil Company in Venezuela.

Bob has departed to his former home in Rapid City, South Dakota, and will fly from there to the island of Aruba off the coast of Venezuela where he will receive eight weeks' indoctrination course in Spanish and customs of the country. He will take his family with him at a later date and they will be flown in.

New York Traffic Engineers Name Gibala President

At the annual meeting of the New York Metropolitan Section, Institute of Traffic Engineers on May 22nd in New York City, John T. Gibala, engineer of the Engineering Bureau, N. Y. City Police Department, was elected president of the Section, to head the group for the coming year. Retiring president T. M. Matson, director of the Bureau of Highway Traffic, Yale University, turned the gavel over to Mr. Gibala who said, "As the group of professional engineers most closely related to the traffic safety and congestion problems, we are facing a situation we've never experienced before. Traffic volumes are seeking new high levels but our automobiles and highway facilities have deteriorated during the war, as evidenced by the rapidly rising traffic accident toll here in New York as elsewhere. There have been 299 traffic fatalities here in the first four and a half months of this year as compared to 245 during the same period last year, a 22% increase.

We as traffic engineers, have the 'know-how' and the responsibility, to make streets safe for pedestrians and automobiles. Our New York Section will perform a definite service to the community by fostering closer association and coordination of effort among the traffic engineers who are dealing directly with traffic problems in the New York Area."

Others elected were: Vice-President, Henry K. Evans, traffic engineer of the National Conservation Bureau, New York, and Secretary-Treasurer, Virden Rittgers, traffic engineer, Rockland Coach Co., New Milford, New Jersey.

Following the election of officers, the group enjoyed a talk by Colonel Arnold Vey, New Jersey State Motor Vehicle Department, Traffic Engineer, who recounted some of his experiences while serving with the army in charge of transportation on the Stilwell Road in the China-Burma-India theater of operations.

Following Col. Vey's talk, the General Electric Company's color sound movie "Life Stream of the City" was shown.

Members and guests attending were:

Louis Bender
Nathan Cherniack
Graham Cole
Henry Evans
John Gibala
Ernest Goodrich
Herbert Keegan
Harry Koch
Charles LeCraw
Charles Lenz
Frank Twiss
Arnold Vey
Edward Wetzel
Leslie Williams
T. M. Matson
Earle Osterhoudt
Virden Rittgers
James Schulster
Richard Siver

Michigan Section, I.T.E., Meets in Detroit

Members and guests of the Michigan Section, I.T.E., met at Detroit

"Turners" Club, April 16, for election of officers and an illustrated talk on the location and design of a section of the John C. Lodge Expressway.

Those elected to office for the 1946-1947 term are: J. Carl McMonagle, President; Ross Harger, Vice-President; and Oscar M. Gunderson, Secretary-Treasurer.

The new officers are to consider the appointment of a committee to study Detroit's transportation problems.

Program chairman, T. T. Wiley, introduced Julien Mead and Harry Shuptrine of the Wayne County Road Commission who gave the illustrated talk.

Those in attendance were:

Members—

J. L. Wehmeyer
T. T. Wiley
Lloyd B. Reid
James A. Baker
Oscar M. Gunderson
Herbert McCaske
John J. Dobelek
Alger F. Malo
Ross Harger
Frank Eisenach
Barney Cyberski

Guests—

Wm. S. Chisholm
Frank A. Ronan
Wm. Poland
E. M. Hibbard
E. A Kamowski
A. J. Hanson
Donald Slutz
Walter Pletcher
Julian Mead
Harry Shuptrine
J. Petterman
C. Michalski
S. Bergsman
J. Perentesis
T. McCarthy
M. D. German
G. Heggie
H. G. Baurle
R. Shoemaker

Robert S. Holmes, (Member I.T.E.), has accepted a Civil Service appointment as Assistant to the War Department Safety Director. In this capacity, Holmes will be directly responsible for policy, administration and supervision of traffic engineering and safety activities connected with the Army Safety Program.

The Army Safety Program is administered by The Provost Marshal General for the Assistant Chief of Staff, G-1, War Department General Staff, and embraces all War Department installations in the United States and Overseas. Operational control of safety activities is decentralized to field agencies.

Holmes states that motor vehicles account for approximately 50 per cent of all types of accidents involving military personnel and civilian employees of the War Department. As proof of the magnitude of the problem, he gives the following statistics on accidents to military personnel alone, compared with combat casualties between Pearl Harbor and V-J Day. These figures, already released to the public, show approximately 950,000 combat casualties (killed, wounded, missing) as compared with approximately 2,100,000 *accident* casualties in the same period. An intensive campaign to reduce motor vehicle accidents through Enforcement, Engineering and Education is already under way and will be intensified when current Army reorganization is completed in June.

Holmes was separated from the service on April 17, 1946, as a Lieutenant Colonel in the Officers Reserve Corps after 62 months of service. During this period of duty, he was active in matters pertaining to traffic engineering and control for the Army. After Pearl Harbor, Holmes was ordered to Washington to assist A. R. Forster (Director of Training, Northwestern Traffic Institute) in establishing a course of instruction in traffic engineering and control for Military Police. Holmes served as instructor and later Chief, Department of Traffic, for the PMG School until May, 1945 when he was again ordered to Washington, this time to organize and administer a motor vehicle safety program for the Army.

During active duty with the Army, Holmes was on leave as traffic engineer for the National Conservation Bureau. He resigned from the Bureau to accept his new position.

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